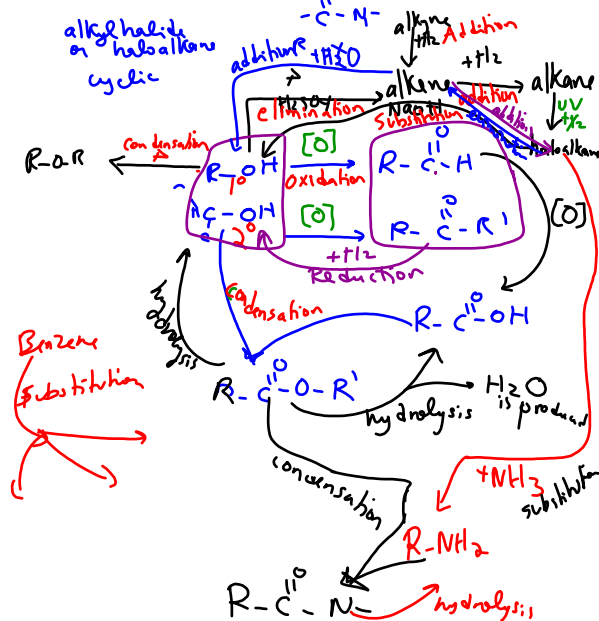


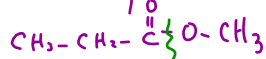
family or functional group

alkane
alkene
alkyne
aromatic
alcohol
ester
ether
aldehyde
ketone
Carboxylic acid
amine
amide
alkyl halide
or haloalkane
cyclic

$C-C$
 $C=C$
 $C\equiv C$
benzene \bigcirc ϕ
 $-OH$
 $-C(=O)-O-C$
 $C-O-C$
 $-CHO$
 $C(=O)-C$
 $-C(=O)OH$
 $-NH_2$ or $-NH$ or $-N-$
 $-C(=O)-N-$
alkyl \downarrow alkene \downarrow alkane
addition $+H_2$ $+H_2$
addition $+H_2$
alkane \rightarrow alkane

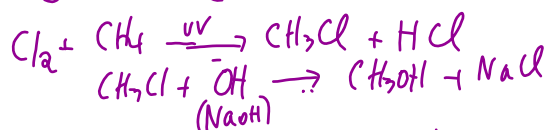


→ Make the product: all you have this:



need: alcohol + carboxylic acid
 $\text{HO-CH}_3 + \text{CH}_3\text{-CH}_2\text{-COOH}$

Can we use CH_4 to make $\text{CH}_3\text{-OH}$?



Can we use bromopropane to make propanoic acid?



Final step:

